



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/918,878	07/31/2001	Morgan Rey Benson	DP-304882	2782
7590	03/22/2004		EXAMINER	
MARGARET A. DOBROWITSKY DELPHI TECHNOLOGIES, INC 4TH FLOOR 1450 W. LONG LAKE ROAD TROY, MI 48098			WILLS, MONIQUE M	
			ART UNIT	PAPER NUMBER
			1746	
DATE MAILED: 03/22/2004				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/918,878	BENSON ET AL.	
	Examiner	Art Unit	
	Wills M Monique	1746	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM
 THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 07 January 2004.
- 2a) This action is **FINAL**. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-16 is/are pending in the application.
 - 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-16 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 31 July 2001 is/are: a) accepted or b) objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
 Paper No(s)/Mail Date _____.
- 4) Interview Summary (PTO-413)
 Paper No(s)/Mail Date _____.
- 5) Notice of Informal Patent Application (PTO-152)
- 6) Other: _____.

DETAILED ACTION

Response to Amendment

This Office Action is responsive to the Amendment filed January 7, 2004. The rejection of claims 1 & 10 under 35 U.S.C. 102(b) as being anticipated by Velasquez et al., U.S. Patent 5,746,781, is overcome. The rejection of claims 11-16 under 35 U.S.C. 103(a) as being unpatentable over Velasquez et al., U.S. Patent 5,746,781, is overcome. The rejection of claims 3-4 under 35 U.S.C. 103(a) as being unpatentable over Velasquez et al., U.S. Patent 5,746,781, in view of Guindy et al., U.S. Pub. 2002/0081488, is overcome. The rejection of claims 5-9 under 35 U.S.C. 103(a) as being unpatentable over Velasquez et al., U.S. Patent 5,746,781, in view of Hanafusa et al., U.S. Pub. 2001/0051298, and further in view of Xing et al., U.S. Patent 6,403,262, is overcome.

Claims 1-16 are treated as follows:

- Claim 9 is objected due to insufficient antecedent basis.
- Claims 1, 2, 8 & 10-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Velasquez et al., U.S. Patent 5,746,781, in view of Chaloner-Gill, U.S. Patent 5,445,856.
- Claims 3-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Velasquez et al., U.S. Patent 5,746,781, in view of Chaloner-Gill, U.S. Patent 5,445,856 and further in view of Mas et al., U.S. Patent 6,348,283.

- Claims 5-7 & 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Velasquez et al., U.S. Patent 5,746,781, in view of Chaloner-Gill, U.S. Patent 5,445,856 and further in view of Hanafusa, U.S. Publication 2001/0051298.

Information Disclosure Statement

The information disclosure statement(s) filed December 19, 2003 has/have been received and complies with the provisions of 37 CFR 1.97, 1.98 and MPEP § 609 .

Claim Objections

Claim 9 is objected to because of the following informalities: the claim recites the limitation "said apertures" in line 2. There is insufficient antecedent basis for this limitation in the claim. Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1, 2, 8 & 10-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Velasquez et al., U.S. Patent 5,746,781, in view of Chaloner-Gill, U.S. Patent 5,445,856.

With respect to claims 1, 10 & 14, Velasquez teaches a plurality of bicell batteries being stack on top of one another (col. 3, lines 25-30 & column 12, lines 25-30); each bicell includes an anode and cathode (col. 4, lines 45-50); each anode and cathode comprises grids (col. 4, lines 45-55); each grid is also connected to a current collector tab (terminal) which extends from the edge of the current collector (col. 15, lines 1-10); and active material may be coated on one side of each current collector leaving the other side of the electrode grid exposed (col. 3, lines 1-10). With respect to claim 10, each bicell unit comprises a positive terminal and negative terminal at opposite ends of the battery unit (Fig. 1); the plurality of bicells are stacked (col. 3, lines 25-31), providing positive and negative terminals being equal to the number of battery units (Fig. 3). With respect to claim 2, the anode tabs (terminals) are preferably welded together and connect to a lead (tang), and the cathode tabs (terminals) are similarly welded and connect to a lead (tang). See column 4, lines 46-60. With respect to claims 11 & 14, the bicells may be stacked and connected in a parallel arrangement (col. 5, lines 34-36). The bicells are packaged in a moisture-impermeable envelope (col. 12, lines 45-50).

Velasquez is silent to a packaging envelope comprising a single sheet of laminated aluminized flexible material (1,8, 10 & 14). The reference is also silent to repeating the configuration with additional battery units, by alternating a first battery unit and second battery unit orientation (claim 12,13, 15 & 16).

Chaloner-Gill teaches a protective multi-layer laminate for covering an electrochemical device comprising aluminum foil laminated with flexible polymeric layers (col. 1, lines 50-60 & col. 2, lines 25-30). The packaging material comprises at least four layers including: insulating nylon material (64); metal foil (66); insulating nylon material (72); and heat sealable layer (60) under the sheet. See Figure 5 and column 6, lines 15-35. The packaging is moisture-resistant to protect the cell from degradation (col. 1, lines 5-10).

Therefore, the invention as a whole would have been obvious to one having ordinary skill in the art at the time the instant invention was made, because even though Velasquez is silent to a packaging envelope comprising a single sheet of laminated aluminized flexible material, Chaloner-Gill teaches that said packaging is moisture-resistant to protect the cell from degradation.

With respect to claims 11 & 14, Velasquez provides that two bicells may be electrically interconnected in an appropriate parallel arrangement (col. 5, lines 33-36), thereby providing a first battery unit and second battery unit oriented such that the positive terminal of the second battery unit is electrically connect to the negative terminal to the first battery units. Concerning the second battery unit rotated around a horizontal axis 180 degrees so that the first and second battery units create a stacked configuration, Velasquez teaches that the bicells may be stacked on top of one another (col. 3, lines 25-30). Therefore, the teachings of Velasquez including stacked bicells connected in parallel, embrace the limitations of claims 11 & 14.

With respect to claims 12,13, 15 & 16, It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide additional battery units that repeat the first and second battery unit orientation, since it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art. St. Regis Paper Co. v. Bemis Co., 193 USPQ 8.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 3-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Velasquez et al., U.S. Patent 5,746,781, in view of Chaloner-Gill, U.S. Patent 5,445,856 and further in view of Mas et al., U.S. Patent 6,348,283.

Velasquez in view of Chaloner-Gill, teach a plurality of bicells as described hereinabove, including anodic and cathodic exposed grids.

Velasquez is silent to cover strips in contact with the anode and cathode exposed grids.

Mas teaches that it is conventional to employ cover strips on the edge of electrode materials to prevent sharp corners of the electrodes from damaging the separator, and thereby, minimizing the occurrence of short-circuiting (col. 1, lines 33-53).

The invention as a whole would have been obvious to one having ordinary skill in the art at the time the instant invention was made, because even though Velasquez does not teach cover strips on the exposed grids, Mas teaches that it is conventional to employ cover strips on the edge of electrode materials to prevent sharp corners of the electrodes from damaging the separator, and thereby, minimizing the occurrence of short-circuiting.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 5-7 & 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Velasquez et al., U.S. Patent 5,746,781, in view of Chaloner-Gill, U.S. Patent 5,445,856 and further in view of Hanafusa, U.S. Publication 2001/0051298.

Velasquez in view of Chaloner-Gill, teach a plurality of bicells as described hereinabove. Including Velasquez's teaching of positive and negative terminals, 12 & 32, including an electrically conducting body portion having a lengthwise axis associated therewith and adhered to exposed grids of respective current collectors (claim 5). See column 3, lines 1-30 and Fig. 2 of Velasquez. With respect to claim 5, the terminal has a third region that is electrically connected to an anode lead (col. 3, lines 25-30 of Velasquez). With respect to claim 6, the terminal includes a fourth region (Fig. 1 of Velasquez).

Velasquez is silent to the terminal comprising a second region having a plurality of apertures in the conductive body (claim 5). The reference is also silent to an adhesive layer extending through a plurality of apertures (claim 9) and insulating material enclosing a fourth region (claims 6 & 7).

Hanafusa teaches that it is conventional to employ a plurality of apertures extending through the electrically conductive body portion (2,3 of Fig. 31). The apertures are provided so that an adhesive resin can seal the outer layers of the foil casing to improve the structural integrity of the seal around the casing (¶ 14 & ¶ 198). Hanafusa teaches that insulating material can be used about the electrode to prevent short-circuiting (¶. 134)

Therefore, the invention as a whole would have been obvious to one having ordinary skill in the art at the time the instant invention was made, because even though Velasquez does not teach a conductive body having plurality of apertures and

an adhesive layer extending there through, Hanafusa teaches that providing a plurality of apertures in the terminal enables adhesive resin to seal the outer layers of the casing, improving the structural integrity of the seal around the casing.

With respect to claims 6 & 7, the invention as a whole would have been obvious to one having ordinary skill in the art at the time the instant invention was made, because even though Velasquez does not teach an insulating material enclosing a fourth region of the terminal, Hanafusa teaches that insulating material can be used about the electrode to prevent short-circuiting. Therefore, the skilled artisan would be motivated to insulating material around various regions of the terminal.

Response to Arguments

Applicant asserts that Velasquez (U.S. 5,746,781) does not anticipate the subject invention, because the reference is silent to a packaging envelope comprising a sheet of laminated, aluminized flexible material. This assertion is correct. Therefore, the rejection of claims 1 & 10 under 35 U.S.C. 102(b) as being anticipated by Velasquez et al., U.S. Patent 5,746,781, is overcome.

Applicant asserts that Velasquez (U.S. 5,746,781) is not obvious over the subject invention, because the reference is silent to a packaging envelope comprising a sheet of laminated, aluminized flexible material. This assertion is correct. Therefore, the

Art Unit: 1746

rejection of claims 11 -16 under 35 U.S.C. 103(a) as being unpatentable over Velasquez et al., U.S. Patent 5,746,781, is overcome.

Applicant asserts that Guindy (U.S. Pub. 2002/0081488) teaches a terminal strip and is silent to a cover strip attached to an exposed grid of the electrodes. This assertion is correct. Therefore, the rejection of claims 3-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Velasquez et al., U.S. Patent 5,746,781, in view of Guindy et al., U.S. Pub. 2002/0081488 is overcome.

Applicant asserts that Hanafusa (U.S. 2001/0051298) teaches apertures in a region of the battery in contact with electrode lead lines, rather than the apertures being in electrical connect with a first region as positively claimed. This argument is not persuasive. The apertures of Hanafusa are located in terminals or electrical lead lines of the battery (Fig. 31). Therefore, any region of the terminal may constitute a first region that is electrically connected to the region containing the apertures.

Applicant's amendment overcomes the rejection of claims 5-9 under 35 U.S.C. 103(a) as being unpatentable over Velasquez et al., U.S. Patent 5,746,781, in view of Hanafusa et al., U.S. Pub. 2001/0051298, and further in view of Xing et al., U.S Patent 6,403,262. This is because Velasquez does not teach a packaging envelope comprising a sheet of laminated, aluminized flexible material. However, Velasquez and Hanafusa have been reapplied in light of Applicant's amendments in the rejection of claims 5-7 & 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Art Unit: 1746

Velasquez et al., U.S. Patent 5,746,781, in view of Chaloner-Gill, U.S. Patent 5,445,856

and further in view of Hanafusa, U.S. Publication 2001/0051298.

Concerning the rejection of claim 2, the subject matter of claim 2 was addressed in the 35 U.S.C. 102(b) rejection as being anticipated by Velasquez. Although the claim was erroneously excluded from the rejection statement, the subject matter of claim 2 was clearly addressed in the Office Action and listed on the Office Action Summary. Therefore, this action is made Final.

Conclusions

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date

of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Monique Wills whose telephone number is (571) 272-1309. The Examiner can normally be reached on Monday-Friday from 8:30am to 5:00 pm.

If attempts to reach Examiner by telephone are unsuccessful, the Examiner's supervisor, Randy Gulakowski, may be reached at 571-272-1302. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Mw

03/10/04

Bruce Bell
BRUCE F. BELL
PRIMARY EXAMINER
GROUP 1760